

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1 – 28. Canceled without prejudice.

29. (New) A host cell for the treatment of cancer that is transfected or tranduced with one or more of a polycomb protein, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope.

30. (New) The host cell of claim 29, wherein one or more of said protein, peptide, or epitope comprises BMI-1, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope.

31. (New) The host cell of claim 29, wherein one or more of said protein, peptide, or epitope comprises Enx/EZH2, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope.

32. (New) A host cell for the treatment of cancer that is transfected or tranduced with at least one of a polycomb protein, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope, wherein the protein is selected from the group consisting of Enx/EZH2, EED, BMI-1, RING-1, HPH1, HPH2, HPC3 and CtBP.

33. (New) The host cell of claim 29, 30, 31, or 32, wherein the cancer to be treated is selected from the group consisting of liver, lung, breast, stomach, colorectal, cervix, prostate, bladder, pancreas, brain or ovarian cancer, melanoma, lymphoma, or leukemia.

34. (New) A vector for the treatment of cancer comprising at least one isolated polynucleotide encoding for a polycomb protein, or an immunogenic peptide or epitope derived therefrom.

35. (New) The vector of claim 34, wherein said protein, peptide, or epitope comprises BMI-1, or an immunogenic peptide or epitope derived therefrom.

36. (New) The vector of claim 34, wherein said protein, peptide, or epitope comprises Enx/EZH2, or an immunogenic peptide or epitope derived therefrom.

37. (New) A vector for the treatment of cancer comprising at least one isolated polynucleotide encoding for a polycomb protein, or an immunogenic peptide or epitope derived therefrom, wherein the protein is selected from the group consisting of Enx/EZH2, EED, BMI-1, RING-1, HPH1, HPH2, HPC3 and CtBP.

38. (New) The vector of claim 34, 35, 36, or 37, wherein the cancer to be treated is selected from the group consisting of liver, lung, breast, stomach, colorectal, cervix, prostate, bladder, pancreas, brain or ovarian cancer, melanoma, lymphoma, or leukemia.

39. (New) A vaccine composition comprising:
one or more of a polycomb protein, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope, and
a pharmaceutically acceptable excipient, carrier, buffer or adjuvant.

40. (New) The vaccine composition of claim 39, wherein one or more of said protein, peptide, or epitope comprises BMI-1, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope.

41. (New) The vaccine composition of claim 39, wherein one or more of said protein, peptide, or epitope comprises Enx/EZH2, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope.

42. (New) A vaccine composition comprising:
at least one polycomb protein, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope, and
a pharmaceutically acceptable excipient, carrier, buffer or adjuvant,

wherein the protein is selected from the group consisting of Enx/EZH2, EED, BMI-1, RING-1, HPH1, HPH2, HPC3 and CtBP.

43. (New) A vaccine composition comprising:

a host cell transfected or tranduced with one or more of a polycomb protein, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope, and

a pharmaceutically acceptable excipient, carrier, buffer or adjuvant.

44. (New) The vaccine composition of claim 43, wherein said protein, peptide, or epitope comprises BMI-1, or an immunogenic peptide or epitope derived therefrom.

45. (New) The vaccine composition of claim 43, wherein said protein, peptide, or epitope comprises Enx/EZH2, or an immunogenic peptide or epitope derived therefrom.

46. (New) A vaccine composition comprising:

a host cell transfected or tranduced with one or more of a polycomb protein, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope, and

a pharmaceutically acceptable excipient, carrier, buffer or adjuvant,

wherein the protein is selected from the group consisting of Enx/EZH2, EED, BMI-1, RING-1, HPH1, HPH2, HPC3 and CtBP.

47. (New) A vaccine composition comprising:

a vector for the treatment of cancer comprising at least one isolated polynucleotide encoding for a polycomb protein, or an immunogenic peptide or epitope derived therefrom, and

a pharmaceutically acceptable excipient, carrier, buffer or adjuvant.

48. (New) The vaccine composition of claim 47, wherein said protein, peptide, or epitope comprises BMI-1, or an immunogenic peptide or epitope derived therefrom.

49. (New) The vaccine composition of claim 47, wherein said protein, peptide, or epitope comprises Enx/EZH2, or an immunogenic peptide or epitope derived therefrom.

50. (New) A vaccine composition comprising:

a vector for the treatment of cancer comprising at least one isolated polynucleotide encoding for a polycomb protein, or an immunogenic peptide or epitope derived therefrom, and

a pharmaceutically acceptable excipient, carrier, buffer or adjuvant,

wherein the protein is selected from the group consisting of Enx/EZH2, EED, BMI-1, RING-1, HPH1, HPH2, HPC3 and CtBP.

51. (New) A method of treating a cancer by immunotherapy, comprising administering to a patient a vaccine composition comprising a polycomb protein, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide encoding said protein, peptide or epitope.

52. (New) The method according to claim 50, wherein the protein is selected from the group consisting of Enx/EZH2, EED, BMI-1, RING-1, HPH1, HPH2, HPC3 and CtBP.

53. (New) The method according to claim 51, wherein the protein is BMI-1.

54. (New) The method of claim 50, 51, or 52, wherein the cancer to be treated is derived from a tissue or organ selected from the group consisting of, liver, lung, breast, stomach, cervix, prostate, bladder, pancreas, brain, colorectal or ovarian cancer, melanoma, lymphoma or leukemia.

55. (New) A method of treating a cancer by immunotherapy, comprising administering to a patient a vaccine composition comprising a polynucleotide encoding a polycomb protein, or an immunogenic peptide or epitope derived therefrom.

56. (New) The method of claim 54, wherein the polynucleotide is included in a vector.

57. (New) The method of claim 55, wherein the vector is an integrating vector.

58. (New) The method of either of claim 56 wherein the vector is a viral vector.

59. (New) The method of claim 55, wherein the vector is a non-integrating vector.

60. (New) The method of claim 58, wherein the vector is a viral vector.

61. (New) The method according to claim 54, 55, 56, 57, 58, or 59, wherein the protein is selected from the group consisting of Enx/EZH2, EED, BMI-1, RING-1, HPH1, HPH2, HPC3 and CtBP.

62. (New) The method according to claim 60, wherein the protein is BMI-1.

63. (New) The method according to claim 60, wherein the protein is Enx/EZH2.

64. (New) A method of treating a cancer by immunotherapy, comprising administering to a patient a vaccine composition comprising a host cell containing a polycomb protein, or an immunogenic peptide or epitope derived therefrom, or an isolated polynucleotide or vector encoding said protein, peptide or epitope.

65. (New) The method of claim 63, wherein said host cell is a dendritic cell.

66. (New) The method of claim 63 or 64, wherein the cancer to be treated is derived from a tissue or organ selected from the group consisting of liver, lung, breast, stomach, cervix, prostate, bladder, pancreas, brain, colorectal or ovary, or is a melanoma, lymphoma or leukemia.